DOCUMENT RESUME

ED 405 531 CG 027 558

AUTHOR Hau, Kit-Tai; Hui, Hing-fai
TITLE Theories of Intelligence, Achievement Goals and Learning Strategies of Chinese Students.
PUB DATE Aug 96
NOTE 13p.; Paper presented at the Annual Meeting of the American Psychological Association (Toronto, Ontario, Canada, August 9-13, 1996).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Achievement; Foreign Countries; *Goal Orientation; Grade 7; High Achievement; *Intelligence; Junior High Schools; Junior High School Students; *Learning Strategies; Secondary School Students; *Sex Differences; Structural Equation Models
IDENTIFIERS *Hong Kong

ABSTRACT

It has been suggested that students' belief of whether intelligence is malleable and flexible would affect their purpose of achievement (achievement goals). This might, in turn, influence their learning strategies. The present study examined the above relationships among 194 Grade 7 Chinese students in Hong Kong. Structural equation modeling showed that high achievers were more concerned with understanding (deep strategy) and less with facts memorization (surface strategy). The belief that intelligence was a fixed inmalleable quantity (entity theory of intelligence) was related to the goal of getting work done with minimum effort (work avoidance goal), which, in turn, was related to a surface learning strategy. Sex differences showed boys to be stronger in goals which emphasized learning and outperforming others. (Author)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 405 531

Theories of Intelligence, Achievement Goals and Learning Strategies of Chinese Students

Kit-Tai HAU

The Chinese University of Hong Kong

Hing-fai HUI

Ming Yin College

Paper presented at the American Psychological Association Annual Conference, Toronto, August 9-13, 1996. Address all correspondence to Prof. K.T. Hau, Faculty of Education, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong. Email: KTHAU@CUHK.EDU.HK

Note. The research was supported in part by the Hong Kong Institute of Educational Research at the Chinese University of Hong Kong.

BEST COPY AVAILABLE

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Kit-Tai Hau

TO THE EDUCATIONAL RESOURCES

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it

☐ Minor changes have been made to improve reproduction quality

• Points of view or opinions stated in this document do not necessarily represent official

CE 071558

Theories of Intelligence, Achievement Goals and Learning Strategies of Chinese Students

Abstract

It has been suggested that students' belief of whether intelligence is malleable and flexible would affect their purpose of achievement (i.e., achievement goals) (Dweck, 1986). This might in turn influence their learning strategies. The present study examined the above relationships among 194 Grade 7 Chinese students in Hong Kong. Structural equation modeling showed that high achievers were more concerned with understanding (deep strategy) and less with facts memorization (surface strategy). The belief that intelligence was a fixed inmalleable quantity (entity theory of intelligence) was related to the goal of getting work done with minimum effort (work avoidance goal), which in turn was related to a surface learning strategy. Sex differences also showed boys to be stronger in goals which emphasized learning and outperforming others.

Theories of Intelligence, Achievement Goals and Learning Strategies of Chinese Students

It has been suggested that our belief of whether intelligence is malleable will affect our purpose of achievement (to outperform others, or just to make self improvement) (e.g., Dweck, 1986). This may in turn affect our learning strategies. The present study examined the above relationships among Chinese students in Hong Kong.

Research suggests students' motivational behavior varies as a function of their goal orientation (e.g., Ames, 1992). Two contrasting goal orientations have been identified and have received substantial research interest. In one, the performance goal, individuals seek to maintain positive judgments of their own competence and avoid negative judgments by trying to prove their competence, and to show superiority. In the other, the learning goal, individuals tend to increase their competence, to understand or master new tasks. Other labels have also been given to these two types of goals, such as task vs. ego-involved or mastery vs. performance-oriented (Ames & Archer, 1988). A third goal, work avoidance, has also been used to describe students who try to get their work done with minimum effort and are relatively passive (Nicholls, 1989). They may also have a relatively negative attitude towards their school and are less concerned with good performance outcome.

Students strong in learning goals believe that effort and outcome covary whereas those strong in performance goals focus more on ability and self-worth (Ames, 1992; Nicholls, 1989). The former try to develop new skills and mastery, and use a self-referenced frame in judging their own achievement. On the contrary, the latter concentrates on favorable evaluation by others and uses a normative-based frame. There are less studies with the work avoidance goal. Generally, work avoidance was found to be related negatively to the learning goal but positively to the performance one.

Students' implicit theory of intelligence has also be suggested as an important determinant of their motivational behavior (Dweck, 1986). It refers to the personal belief on whether intelligence is a fixed quantity. On one extreme, the entity theorists hold the belief that intelligence a fixed, inmalleable, and difficult to change quantity. On the opposite end, the incremental theorists believe intelligence to be flexible, fluid, and changeable. Students with the entity conception are believed to adopt the performance goals, whereas those with the incremental conception will prefer the learning one.

As students with different learning goals have different perception of what constitutes a success, it is understandable they may adopt different strategies in their learning. Entwhistle and Ramsden (1983; see also Biggs, 1987)) had distinguished two types of learning strategies. The first is the deep-processing strategy which emphasizes the extraction of significant concepts and the relating of newly learned concepts with the existing schemata. The second one is the surface- strategy which includes simple repetitive reading and memorization of the new contents. Nolen (1988) and Ames and Archer (1988) showed that learning goals were related positively to deep processing, performance orientation positively to the surface one, and work avoidance negatively to both deep and surface ones.

There seems to be some evidences suggesting that Chinese students attributed their examination results more to effort than to ability and that they had relatively strong learning goals (Hau & Salili, 1991, in press). The present study examined the relationships among theories of intelligence, achievement goals, and learning strategies of Chinese students in Hong Kong. It would also show how the stronger emphasis of learning (rather than performance) in the Chinese culture might affect such relationships.

Method

Sample

The subjects were 194 Grade 7 Chinese students in Hong Kong. Their academic standard were generally above the average of the Hong Kong population but most of them were from families of average social economic class.

Instruments

In this study, we had adopted items from an unpublished instrument constructed by Herbert.W. Marsh. The original instrument consisted of over a hundred items on various aspects of classroom environment and student learning orientations. We had adapted for this study items on theories of intelligence and learning strategies.:

Theories of intelligence. The two subscales of implicit theory of intelligence followed that as defined by Dweck (1986). There were nine 7-point items such as "A smart child will always be smart."(entity theory), "As children learn new things they become smarter" (incremental theory) (reliability α =.68, .82).

Achievement goal. The scale was partly adapted from that developed by Nicholls and his researchers (1989; Nicholls, Patashnick & Nolen, 1985) and Meece, Blumenfeld, and Hoyle (1988). There were 4, 5, and 5 items for learning (α =.74), performance (α =.76) and work-avoidance (α =.73) goals respectively, such as "I feel most successful if I learn something new.", "I feel most successful in school when I am the best.", and "I feel happy when I don't need to pay too much effort.".

Learning strategies. The scale was developed by Biggs (1987) and adapted by Marsh. There were 4 items each in deep and surface strategy (α =.56, .48),, such as "School should teach me to think for myself.", "I only study what the teacher says, no more.".

The term examination results immediately before the administration of the questionnaire were also obtained from the schools.

Results and Discussion

Separate confirmatory factor analyses (LISREL version 8, Joreskog & Sorbom, 1993) were called out for each of the constructs. The correlations among the subscales are also shown in Table 1. Preliminary analyses showed that the results were in general agreement with previous findings.

The main analyses involved a regression type of analysis using structural equation model. The a priori model based on the above literature review consisted of two sets of paths, namely, theories of intelligence on achievement goals and learning strategies, and achievement goals on learning strategies. The standardized school examination achievement score and sex of the student were also allowed to have direct effects on goals and strategies. In the final model (see Figure 1), nonsignificant paths were removed from the model. As recommended by various researchers (e.g., Marsh, Balla, & Hau, in press), goodness of fit was evaluated by χ^2, RNI, and TLI. It was found that the model has acceptable fit to the data; χ^2 (481) = 580, RNI = .92, TLI = .91.

In agreement with other research, high achievers had stronger deep learning strategy and weaker surface learning strategy. This was in congruence with our belief that learning goals are more desirable and adaptive than the performance ones (Dweck, 1986). Students should be urged to improve themselves rather than just to outperform others. As shown in the path diagram, entity theory of intelligence also had a strong indirect effect on surface learning strategy through work avoidance goal. This again confirmed the previous argument that the entity theories, with work avoidance goal as a mediator, might lead to the less desirable surface study strategies. It should be noted that work avoidance goal has often been associated with low achievers who have less interest in study.

Sex was not related to learning strategies but was associated with achievement goals indicating boys were stronger in both learning and performance goals. This may perhaps reflect the stronger parental emphasis of success on boys than on girls.

In sum, in agreement with previous research, the findings in this study showed important relationships among theories of intelligence, achievement goals, and learning strategies. The relationships also support the claim that the incremental theories of intelligence, learning goals, and deep strategies are more desirable orientations to be adopted.

Reference

Ames, C. (1992). Classrooms: Goals, structures, and student motivation. *Journal of Educational Psychology, 84*, 261-271.

Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. *Journal of Educational Psychology, 80,* 260-267.

Biggs, J .B. (1987). *Students approaches to learning and studying*. Australian Council for Educational Research, Victoria: Hawthorn.

Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist, 41,* 1040-1048.

Entwhistle, N. J., & Ramsden, P. (1983). *Understanding student learning*. London: Croom Helm.

Hau, K. T., & Salili, F. (1991). Structure and semantic differential placement of specific causes: Academic causal attributions by Chinese students in Hong Kong. *International Journal of Psychology, 26*, 175-193.

Hau, K. T., & Salili, F. (in press). Prediction of academic performance among Chinese students: Effort can compensate for lack of ability. *Organizational Behavior and Human Decision Processes.*

Joreskog, K. G., & Sorbom, D. (1993). *Structural equation modeling with the SIMPLIS command language*. Hillsdale, NJ: Lawrence Erlbaum Assoicates.

Marsh, H. W., Balla, J. R., & Hau, K. T. (in press). An evaluation of incremental fit indexes: A clarification of mathematical and empirical properties. In G. A. Marcoulides & R. E. Schumacker (Eds.), *Advanced structural equation modeling techniques*. Lawrence Erlbaum.

Meece, J. L., Blumenfeld, P. C., & Hoyle, R. H. (1988). Students' goal orientations and cognitive engagement in classroom activities. *Journal of Educational Psychology, 80,* 514-523.

Nicholls, J. G. (1989). *The competitive ethos and democratic education.* Cambridge, MA: Harvard University.

Nicholls, J. G., Patashnick, M., & Nolen, S. B. (1985). Adolescents' theories of education. *Journal of Educational Psychology, 77,* 683-692.

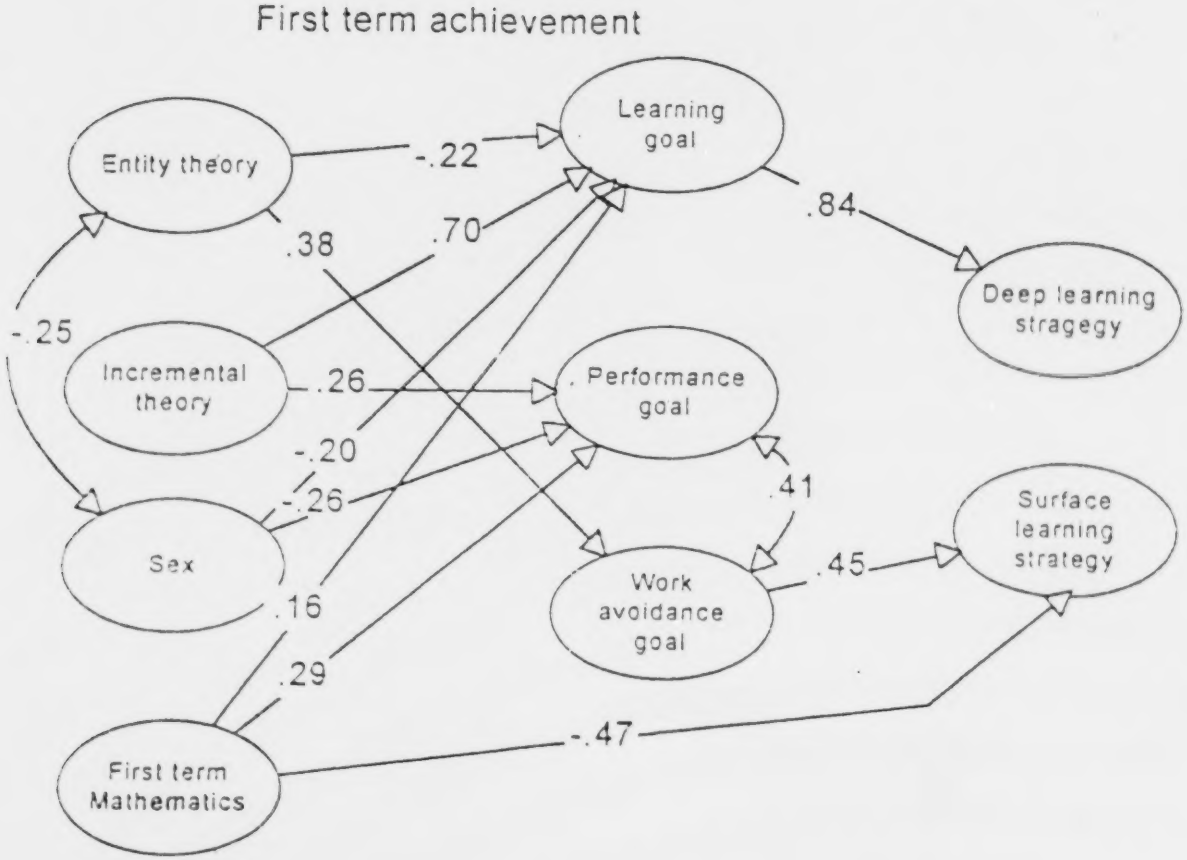
Nolen, S. B. (1988). Reasons for studying: Motivational orientations and study strategies. *Cognition and Instruction, 5,* 269-287.

Table 1

Correlations among Implicit Theories of Intelligence, Achievement Goals and Learning Strategies

Variables	1	2	3	4	5	6	7
1. Learning goal	1.00						
2. performance goal	.43*	1.00					
3. Work avoidance goal	.14	.47*	1.00				
4. Deep learning strategy	.81*	.35*	.02	1.00			
5. Surface learning strategy	.01	.10	.48*	-.19	1.00		
6. entity theory	-.19	.06	.31*	-.06	.61*	1.00	
7. incremental theory	.66*	.28*	.04	.60*	.13	.08	1.00

*p<.01.



Note: The numeric values are standardized values

BEST COPY AVAILABLE